

May 9, 1865.

Dr. J. E. Gray, F.R.S., V.P., in the Chair.

The following extracts were read from a letter addressed to Dr. J. E. Gray by Mr. E. L. Layard, of Cape Town, Corr. Memb. :—

“I send you herewith figures and descriptions of a new species of Zebra. You have had a skin sent you\* which you rejected as a ‘stray specimen of *E. montanus*, which had got down on the plains and had been shot by accident’†. I am sure you will, on perusal of these notes, alter your opinion; and I shall be obliged to you to read them at the Zoological Society. I wish to name the animal *Equus chapmani*, after its discoverer, my friend James Chapman, who has done so much for African discovery, and who has hitherto reaped no reward. I send you photographs of a horse and a mare of this Zebra in different positions to show the markings, which differ entirely from those of *E. montanus* (vel *E. zebra*) in the union of all the black stripes with a medial one on the belly; also on the back, in wanting the ‘gridiron’ pattern, as Baines calls it, on the rump. I also send coloured sketches by Baines to show the colour. This new animal also differs from the other Zebras in having the callosities on the legs far larger and of a more rounded shape, in having shorter and more equine ears, measuring only  $6\frac{1}{2}$  inches instead of  $11\frac{1}{2}$ , and in having a shorter and more equine head and tail. The hoofs also are flatter than in *E. montanus*, and not adapted for mountain-work. The mane grows several inches down on the forehead, and stands up between the ears, so that when seen in full face it stands far higher than them. Chapman and Baines give the dimensions of several individuals; and all who have seen them here, who are competent to judge from knowing the other species well, at once detect the differences. I am quite convinced of them myself; and, if you still doubt, please read this letter and the notes, and exhibit the drawings, to the Zoological Society in my name. They roam in large herds, and are first met with about 200 miles from the coast inwards on leaving Walwich Bay, where *Equus montanus* (or rather a variety of that animal) prevails. I add some extracts from the journals of Mr. Chapman and Mr. Baines relating to this Zebra.”

“Extract from Mr. J. Chapman’s Journal, dated May 21, 1862.

“The Quaggas here, I think, from about Sechellies’, though by no means new to me, are different to any we see described in books of natural history. The brush of the tail of one I shot to-day, and which is rather a young specimen, is a dark grey, while the base is

\* The skin sent me by Mr. Baines arrived in bad condition, with scarcely any hair on it. It was that of a very young animal, and I could not see any difference, as far as I could judge in its very bad state, from that of a young Common Zebra.—J. E. G.

† I have no recollection of having made such a statement as the latter part of this quotation.—J. E. G.

white. In older specimens the brush is black, with a few white hairs intermixed. It has a head band traversing the middle of the belly, from which the transverse bands diverge alternately. The stripes are of a very deep rich brown, nearly black; while the ground-colour is raw sienna on the upper parts (back, rump, sides, &c.), but gradually fading into white on the lower parts. It has an erect mane of alternate bands of white and black, edged with brown. The ears are white, with a dark band near the tip and broader band at the base. The muzzle is grey or lead-coloured, and behind the nostrils a brown coffee-colour. It has a bare spot on all four fetlocks, with a brown crescent-shaped spot on either side of it. A bare patch above the knee, on the inside of each fore leg. The pastern joints are brown, excepting at the back, where it is divided vertically by a white line from fetlock to hoof. The ears are decidedly equine. The mane is 6 inches long on the back; commencing from about 4 inches down the forehead, extends to the length of  $2\frac{1}{2}$  feet down the back. The markings of it are continuations of the transverse lines which cross the back. The white bands on the mane are quite superficial, the hair underneath being actually black, edged with brown. Length of ears 6 inches. The head measures 2 feet from the top of the skull to the point of upper lip. From the root of the mane on the forehead and from top of forehead narrow lines of white and black (the latter sometimes streaked with brown in the middle) diverge in a triangular manner towards the eyes, where the outside lines, making an angle, continue down the face, drawing closer towards the extremity of the face (the inside lines being straight), where they blend and form a dark brown patch behind and above the nostrils, the muzzle and the lips being grey. Broader bands emanate from this dark muzzle, and cross the chest in a crescent shape, leaving a white margin around the eyes, behind which the regularity of the lines is interrupted by those of the neck; and the space from below the eye is filled up with markings of a hieroglyphical character. The stripes under the chin are light brown. The circumference of the neck is 2 feet. The dorsal line extends to the brush of the tail, which is of a dark grey; and on the base of the tail, which is white, it becomes narrower, and is dotted all the way down on either side with spots of black, edged with brown. The form of the tail approaches nearer to that of the Horse in the largeness of the brush than the Zebra or the Ass; but it is still not exactly like a Horse's tail. On the thighs the stripes are alternately pale brown and deep brown, horizontal, but curving and forming a right-angled triangle on the flank; and an acute and more perfect triangle is formed on the shoulder-blades by the junction there of the stripes from the neck and breast with the transverse stripes. A longitudinal dark band traverses the whole length of the belly, becoming narrower and deeper on the breast, around which it winds and continues, forming one of the oblique lines, to the centre of the shoulder-blades. From out of this ventral line diverge the transverse lines tending towards the dorsal line, but not connected therewith. On the legs the stripes gradually assume a horizontal direction from the top downwards, but continuing the ob-

lique direction longer on the hind legs, and are distinctly, though sometimes only faintly, visible to the hoofs in this specimen. Others are more strongly marked. In some cases the transverse lines do run into the dorsal line; but in no two specimens do the markings seem to be exactly alike, the lines sometimes branching into two or three as they approach the dorsal line on the flank, and the angle at the junction of the horizontal or oblique lines, these with the transverse being sometimes filled up with disconnected hieroglyphical characters.

“The height of a young male shot in June 1862, at the shoulder, was  $4\frac{1}{2}$  feet, at the rump 5 feet.”

“Notes of a supposed new variety of Quagga observed on the elevated flats between the Botletle and Zambesi Rivers during the late journey of J. Chapman and T. Baines. By T. BAINES.

“Extract from my diary:—

“20th May, 1862.—Chapman had shot a Quagga answering most nearly to the Bonte Quagga or Burchell’s Zebra, which is striped over the neck and body, the legs only, from the knees and houghs, being white; in this, however, faint markings were continued all the way down, and a peculiar line was run along the centre of the stomach, making me think it must be a new variety. Unfortunately it is already cut up by Damaras and Bushmen.

“As nearly as I can remember, Chapman, on returning, remarked, ‘The Quaggas here are not like those of Vaal River; they have stripes on their legs;’ then said, ‘and if they are not Zebras they must be new, for only two kinds are described—the common one of Kafirland with no stripes on the rump or legs, and *E. burchellii*, the Bonte Quagga, with no stripes on its legs’\*. Chapman considered they were not Zebras (as the animal is called here), *E. montanus* having longer ears and asinine head and tail, whereas the head and ears of these were more like those of a Horse, and the tail more bushy. Besides this, *E. montanus* is strictly confined to hills and broken ground, while these live in immense herds on the flat, with no mountains within many days’ journey. We determined on further investigation.

“Latitude of the camp  $20^{\circ} 5' 55''$  south.

“June 26th.—Chapman shot a Quagga strongly marked, like the former ones, on the parts of the legs that are usually white; he sent to let me know; but John, who has no idea of anything that has not a market value, had called the Damaras to cut it up.

“30th.—The head and legs of a Quagga were brought in, the latter being, as before, strongly marked quite to the hoofs, the recurrence of this peculiarity showing that it cannot be a mere individual accident, such as is seen in difference of colour in domestic animals.

“July 10th.—Chapman shot a Quagga and Sable Antelope at a

\* This passage reads obscurely. Baines means only two kinds of Quagga: the hunters call *E. quagga* and *E. burchellii* “Quaggas,” while *E. montanus* they call “Zebra.”—E. L. L.

distance from the waggons. I sketched from the skin and horns of the latter, and the legs and ears of the Quagga. This had been a smaller animal, but of stouter and more compact build than those hitherto seen. I have already mentioned those at the Salt-pan with decided markings on the legs below the knees and houghs, while the two described species are perfectly white; and now this animal, besides being stouter and shorter of limb, is more strongly marked, the colours being distinct and pure black and white, the black spreading almost half over the pastern-joint and fetlock, and having a small white edging between it and the hoofs; the ears are strongly banded and slightly tinted with brown. I thought at first it might be a Zebra; but Chapman considered it a true Quagga, and I am inclined to think so too.

“This was at Dāká (lat.  $18^{\circ} 40' 1''$ ). After coming down off the elevated plain into the mountainous valley of the Zambesi system, we were encamped on one of the spruils of the Luisi, the first running water we had seen since leaving the Botletle River.

“Thursday, 17th, Matietue River.—Chapman had shot a Quagga mare; and, hastening to the spot, I found an eager group of natives with difficulty restrained from rushing at once upon the prey. In this case we had to omit the measurement; but I sketched the stripes carefully, and the camera of course cannot be gainsaid. The general colour was a yellowish or raw-sienna brown on the upper parts, and deepest on the rump, fading into white on the neck, belly, and legs; the stripes were of the deepest brown or nearly black, and the difference between this and the known varieties consisted in their being continued quite down to the hoof on all four legs, slightly fainter on the inside; the belly was marked by a broad black band along the centre, to which all the side stripes were joined; on the back was a similar black line, but only the stripes above the shoulder were connected with it; the mane was upright, as usual (the neck-stripes being continued vertically through it); the ears small and equine, and a bare spot (rather small) was observable on the inside of the fore legs only, the Zebra, I believe, having it on all four, as well as large ears.

“I made two sketches of this, and Chapman two photographs. There are intermediate brown stripes between the black ones on the hind legs above the hough.

“Saturday, July 19th.—We proceeded about a mile north-east by north, when, near the small conical hill on our left, Chapman brought down a fine young Quagga stallion of the same kind as the mare previously killed; but age, I suppose, not having deepened the colours, its whole body was of the purest white, marked with jet-black bands down to every hoof, in the manner of the other, but slightly fainter on the inside of the legs, and also where the stripes of the sides joined to the longitudinal line of the belly, some of those on the flanks having these points so faintly marked that the junction could not be called complete; like the other, a central stripe ran along the back, with which two or three of the shoulder-stripes (on each side) were connected, the broad stripes of the hinder parts

originating near the central line about the insertion of the tail, and diverging laterally over the hip, flank, and side till they completely or nearly reached the ventral line, the longest of them meeting on their way the ventral stripes of the sides, and forming the most beautiful possible combination of curves and angles, even the slight variation of regularity on either side conducing to the effect; the ears were small, and banded and tipped with black and dark brown; the head well shaped, with a little sienna-brown towards the nose; and the whole form lighter and more elegant than in the older specimens.

“Sunday, September 14th.—I shot two, which at first I took for Mountain-Zebras; but on comparing notes with Chapman, I came to the conclusion they were also Quaggas. The stallion fell at a distance, and was cut up while I was sketching and observing the mare. She was full striped, somewhat smaller than most of those Chapman had killed; ears, if anything, shorter and more equine. Callosities or small bare patches of skin on the inside of the fore legs only, and not on the hinder legs; striped right down to the hoofs; inside more faintly marked than the outer. Dokkie and others thought it like the Wilde Paard of Ozembengue, and different to the Quacha of the plains. I believe they would have said anything, so that I would have done talking and let them begin to cut it up.

“Sunday, December 7th.—Went out from Logu Hill, Zambesi River; tracked spoor several hours; wounded a mare, which was run down late in the afternoon, and killed with a stone. Fully striped, as before, down to the hoofs, all four legs, the inside of the forearm and thighs being more faintly marked; the ears small and tipped with black; the stripes on the sides extended from the dorsal line to the ventral, which last, reaching from between the fore legs to the hinder, was of not quite so deep a black; the ground-colour was light-yellowish brown on neck, back, and sides, passing into white on the cheeks, throat, and under parts of body; the teats, two in number, were situated in the after part of the black ventral lines. She had warts or callosities on the inside of the forearms only, and none on the inside of the thigh.

“I sketched carefully, and took the skin home, attempting to preserve it; but the weather was so damp that, even in a hut with a fire in it, I could not dry it.

“Tuesday, 14th April, 1863 (after our return to the salt-pan on the elevated plain between the Zambesi and Botletle Rivers).—A few Quaggas were standing on the further plain, and creeping behind a point at 300 yards' range. I shot one through the neck and forehead: it proved to be a well-grown, handsomely marked filly of the first year; and as the rest retreated, I noticed that the mare hung back and looked frequently round for her lost little one, returning when the others were out of sight and gazing wistfully at the spot where it lay.

“I had no means of measuring the beautiful little creature on the spot; and for convenience of carrying I had only my small sketch-book, so carefully outlined out one of the fore legs. I sent Pompey

back for assistance, and in the interval sketched on a small scale, and, stripped off the skin, which is a good size for a small museum, and, as carriage is a consideration, suits me better than a large one.

“It is perfectly marked after the manner of Quaggas in this locality, but not so fully as those of Dāká and the Zambesi, and is most certainly an intermediate link between already described varieties and the Zebra. The chief points worthy of note are that the legs, instead of being white as in the Bonte Quagga (*E. burchelli*) from the houghs and knees, are marked with transverse bands, not so dark as those on the body, quite down to the hoofs; there is a dark stripe, commencing between the fore legs and extending along the belly to between the hinder, where it becomes broader and somewhat fainter; the first three stripes behind the shoulder are joined to this; the dark stripes on the rump are alternated with others of a medium brown, but those on the fore part of the body and neck are of a full deep black; there are callosities on the inside of the fore legs only, and none on the hinder.

“Chapman killed two Quaggas during the day. I believe they were very faintly marked on the legs; but the vultures and Damaras destroyed them. The skins are quite worthless, which is much to be regretted, as we think it certain they are true Quaggas undescribed in any work we know of, and, as a new variety, would have been a handsome gift to any museum.

“Pereira told me subsequently, the Quagga of Damaraland has legs very nearly white; there are faint stripes, but not visible till you come close to them; there are warts on the fore legs only. The Wilde Paard is darker, the stripes blacker; the head is larger, and the ears also; they stand up so as to be visible above the mane. The Wilde Paard goes in the hills, the Quagga on the flats.

“I sent down the skin of the filly to Mr. Logue in Cape Town, and he forwarded it to the British Museum.”

With reference to this communication, Mr. Sclater remarked that the female Zebra in the Society's Gardens (presented to the Menagerie, May 26th, 1861, by H. E. Sir George Grey), which he had hitherto referred to *Equus burchelli*, appeared to answer the description above given in every way, and must probably be referred to *Equus chapmani* if that species were allowed to stand. Mr. Sclater exhibited a drawing by Mr. Wolf (Plate XXII.) representing this animal.

The following papers were read:—

1. ON THE DEVELOPMENT OF THE STERNAL CALLOSITIES IN CYCLANOSTEUS SENEGALENSIS, AND ON THE SYNONYMS OF CYCLANOSTEUS AND ITS ALLIED GENERA. BY DR. J. E. GRAY, F.R.S.

The British Museum has recently purchased, at a sale of the natural-history specimens collected by the late Dr. William Balfour Baikie, R.N., during his recent explorations up the Niger, a series of five specimens of the Tortoise, which I figured in the 'Catalogue